REMARKS

The applicant, Zeev Smilansky, representative, Allan A. Fanucci, acknowledge and appreciate the courtesies extended by Examiner Michael Borin during a telephone interview on June 9, 2009. The comments appearing herein are essentially the same as those presented and discussed with the Examiner during the interview.

New claims 109-121 are presented herewith for the Examiner's review and consideration. Claim 109 recites preferred embodiments, support for which is found in previous claims 86 and 105 as well as in the specification, e.g., in paragraphs [0180], [0182] and [0314] of the published application. New claims 110 to 115, are essentially the same as prior claims 90, 91, 93, 98, 102 and 104, which have been cancelled. New claims 116-121, depending from claim 109, recite preferred embodiments, support for which is found in the specification, e.g., paragraphs [0083], [0176] , [0253], [0280], and [0328] of the published application. As no new matter has been introduced by these changes and additions, they all should be entered at this time to place the present claims in condition for allowance as well as to reduce issues for appeal.

Claims 86, 87, 89-100 and 102-108 have been rejected under 35 U.S.C. 112, first paragraph, as allegedly containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. In response, Applicant respectfully submits that the new claims have been written to avoid this issue. In particular, claim 109 recites that a first label is bound to at least one ribosome or a fragment thereof and a second label is bound to at least one tRNA. Support for this language is found in the specification at paragraphs [0180] and [0182] as noted herein. Even the prior language was supported by the specification, e.g., paragraphs [0043] and [0059] of the published application, for the prior recitation of "the marker comprises a first portion being a fluorescent substance and a second portion for quenching the fluorescent substance," and in paragraphs [0044] and [0060]–[0061] of the published application for the recitation that "at least a portion of the marker is covalently or non-covalently bound to a tRNA" and that "at least a portion of the marker is covalently or non-covalently bound to at least a portion of a ribosome." Moreover, the experimental examples also demonstrate how the donor or acceptor label can be covalently attached to the tRNA or the ribosome (see paragraphs [0258]-[0270] of the published application). In particular, paragraph [0270] even provides guidance to remove the non-

covalently bound dye by two phenol extractions. Thus, the rejection is not applicable to the present claims.

Claims 86, 87, 89-100 and 102-108 have been rejected under 35 U.S.C. 112, second paragraph, as being allegedly indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Again, the new claims are written in a way to avoid this rejection. As explained above, it is clear that the first and second labels are portions of the same marker but are bound to different components that enable the marker to form when the components come into proximity. The present claims further recite that he protein synthesis is monitored by detecting electromagnetic radiation signals emitted by the marker when the first and second labels are in proximity and analyzing the detected signals by interrogating a database compiled from signal data so as to identify the one or more proteins that most likely have produced the detected signals. Therefore, the rejection is not applicable to the new claims.

Claims 86, 87, 89-94, 98, 100 and 108 have been rejected under 35 U.S.C. 102(b) as allegedly anticipated by US patent No. 6,210,941 to Rothschild et al. (referred to hereafter as "Rothschild"). Rothschild relates to methods for the non-radioactive labeling, detection, quantitation and isolation of nascent proteins translated in a cellular or cell-free translation system.

In Rothschild, the labels are placed on the amino acids which will eventually be incorporated in the newly synthesized protein for the detection of the isolated protein. In contrast, in the presently claimed method, the labels are placed on the ribosome and tRNA for monitoring the synthesis of the at least one protein at the elongation stage of the protein synthesis process. Nowhere in Rothschild teaches or suggests a system comprising a marker detectable through detection of electromagnetic radiation with the marker comprising a first label covalently bound to at least one ribosome or a fragment thereof, and a second label covalently bound to at least one tRNA, as presently claimed. Rothschild also does not teach how to monitor protein synthesis by detecting electromagnetic radiation signals emitted by the marker when the first and second labels are in proximity and analyzing the detected signals by interrogating a database compiled from signal data so as to identify the one or more proteins that most likely have produced the detected signals. Therefore, the anticipation rejection over Rothschild is not applicable to the present claims.

Claims 86, 87, 89-94, 98, 100 and 108 have been rejected under 35 U.S.C. 103(a) as allegedly unpatentable over a publication by Odom et al. (Biochemistry, 1990; 29(48):10734, referred to hereafter as "Odom") and Rothschild taken together with a publication by Weiss (Science, 1999, 283, 1676-1683, referred to hereafter as "Weiss") and Ha (Single Molecules, 2(4), pp 283-284, 2001, referred to hereafter as "Ha").

As explained above, Rothschild does not teach or suggest the presently claimed invention. Odom discloses the movement of tRNA during peptide bond formation on ribosomes. Odom does not teach or suggest the presently claimed invention, either, because Odom does not disclose, teach or even suggest how monitor the synthesis of at least one protein according to the present method.

Weiss and Ha are cited to show the known use of single molecules having two labels for fluorescence resonance transfer studies of biological objects, such as cells. Applicant does not dispute that such a technology is well-known. However, none of the prior art references applies this labeling technology at the elongation stage of the protein synthesis process so as to monitor the synthesis of at least one protein in real time, as presently claimed. As neither Weiss nor Ha teaches or suggest the presently claimed method, they do not remedy the deficiencies of the primary references. Even combining Rothschild with Weiss and Ha, one of ordinary skill in the art will only label amino acids with the labeling technology disclosed in Weiss and Ha to detect proteins after synthesis, instead of labeling ribosomes and tRNAs to monitor the synthesis of at least one protein at the elongation stage of the synthesis process, as presently claimed. As noted above, this is achieved by detecting electromagnetic radiation signals emitted by the marker when the first and second labels are in proximity and analyzing the detected signals by interrogating a database compiled from signal data so as to identify the one or more proteins that most likely have produced the detected signals.

In sum the cited references, either alone or in combination do not teach or suggest the present invention as claimed. Therefore, the rejection should be withdrawn.

A Supplemental Information Disclosure Statement is also enclosed. It is respectfully submitted that the references cited thereon are not material to the patentability of the present claims, and the Examiner's acknowledgement of the same would be appreciated.

In view of the additional art cited and the new claims that are submitted, a Request for Continued Examination is also being filed concurrently herewith.

In view of the foregoing, it is believed that the entire application is now in condition for allowance, early notice of which would be appreciated.

Respectfully submitted,

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Allan A. Fanucci (Reg. No. 30,256)
WINSTON & STRAWN LLP
Customer No. 28765
212-294-3311